

ABSTRACT

Apparatus and methods are provided for pumping concrete using a pumping apparatus including first and second drive cylinders, a valve, and a pump. Fluid is delivered into the 5 cylinders from the pump to reciprocate pistons within the cylinders. Pressure within the cylinders is monitored, and a direction of flow of the fluid is switched based upon the pressure within the cylinders. For example, during rod-side operation, the valve is set to deliver fluid into a head side of 10 the cylinders. When the pressure exceeds a predetermined threshold, the valve switches to head-side operation, and fluid is delivered into a rod side of the cylinders. If the pressure falls below the threshold, the valve switches the cylinders back to rod-side operation.

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